

the main cable on the other hand, with specific logistics suited to each family.

However, there is nowadays a desire to gradually move  
5 the operations for laying and gathering the acquisition systems toward greater automation, so as to cut the associated labor costs and reduce the duration of these operations. Such movement is made tricky nowadays by the fact of having to handle these two families of  
10 objects.

Finally, it has been seen that the two architectures each exhibited drawbacks. The operators must therefore determine, on the basis of the specifics of the  
15 geophysical data acquisition campaign to be carried out, the suitable architecture. This implies that in many instances no choice of architecture will be optimal, and that the operators must have access to the hardware required for implementing the chosen  
20 architecture, this leading to overequipment or to hiring which is detrimental in terms of costs.

A purpose of the invention is to make it possible to produce systems for acquiring geophysical data which  
25 are economical to manufacture and utilize by virtue of the sizeable reduction in the number of connectors employed in these systems.

A second purpose of the invention is to facilitate the  
30 operations for laying and gathering the acquisition systems by harmonizing the format of their components (which at present comprise casings and cables, the formats of these two types of components being very different).

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A third purpose of the invention is to make it possible to produce a system in which the casings are of

substantially smaller dimensions than the dimensions of present-day casings.

Another purpose of the invention is to make it possible  
5 to produce systems according to the objectives hereinabove, in which the casings may be subjected to sizeable tensile loads (of the order of 500 Newtons for utilization on land, and of the order of 2 500 Newtons for utilization in a wet environment of the "shallow  
10 water" type to use the widespread terminology), while still having reduced dimensions (of the order of 200 cm<sup>3</sup>).

In order to achieve these purposes, the invention  
15 proposes a module for acquiring geophysical signals, comprising:

- at least one casing B''(i), B'', which houses processing means including means for digitizing the signals,
- and two cable sections C''(i) each comprising:
  - at a first end, a connector suitable for being coupled up to a complementary connector,
  - at a second end, an adapter designed to be fixed to the casing and to effect an electrical link with the processing means housed in the casing.

Preferred but nonlimiting aspects of the system according to the invention are the following:

- it comprises at least two casings, linked in series  
30 by cable segments, comprising at each end an adapter designed to be fixed to the casing and to effect an electrical link with the processing means housed in the casing.
- each casing comprises a rigid member fixed on one  
35 face of the respective adapters secured to the respective cable sections or segments, so as to take up a sizeable part of the tensile loads exerted between these two cable sections or segments.

- each casing comprises means for attaching the adapters of the cables to the rigid member.
  - the means for attachment are rigid lugs, a part of which is embedded in the adapter, another part of each lug projecting from the adapter toward the rigid member and engaged in a respective orifice of the rigid member along a direction substantially perpendicular to the direction of the part of the cable sections or segments which is adjacent to the casing.

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  - processing means integrated into the cable adapters comprise spark arresters.
  - the rigid member carries means for processing electrical signals.
  - each casing comprises leaktightness means.

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  - the leaktightness means comprise a seal placed in a space circumscribed by the lugs.
  - at least one casing comprises a platen situated on a second face of the cables which is opposite the first face and is substantially parallel to the rigid member.

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  - parts of the lugs which project toward the platen are engaged in orifices of said platen.
  - the cable section end connectors are mechanically and electrically hermaphrodite and are identical.
  - the adapter situated at the second end of each cable section is designed to be fixed in a removable manner to a casing.

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  - the casings comprise a port for the connection of at least one geophysical sensor outside the casing.

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30 Other aspects, purposes and advantages of the present invention will become more apparent from reading the following detailed description of a preferred embodiment thereof, given by way of example and with reference to Figures 3 to 6b of the appended drawings, in which drawings:

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  - Figure 1 is a diagrammatic representation of a geophysical data acquisition system according to a first known type of architecture,